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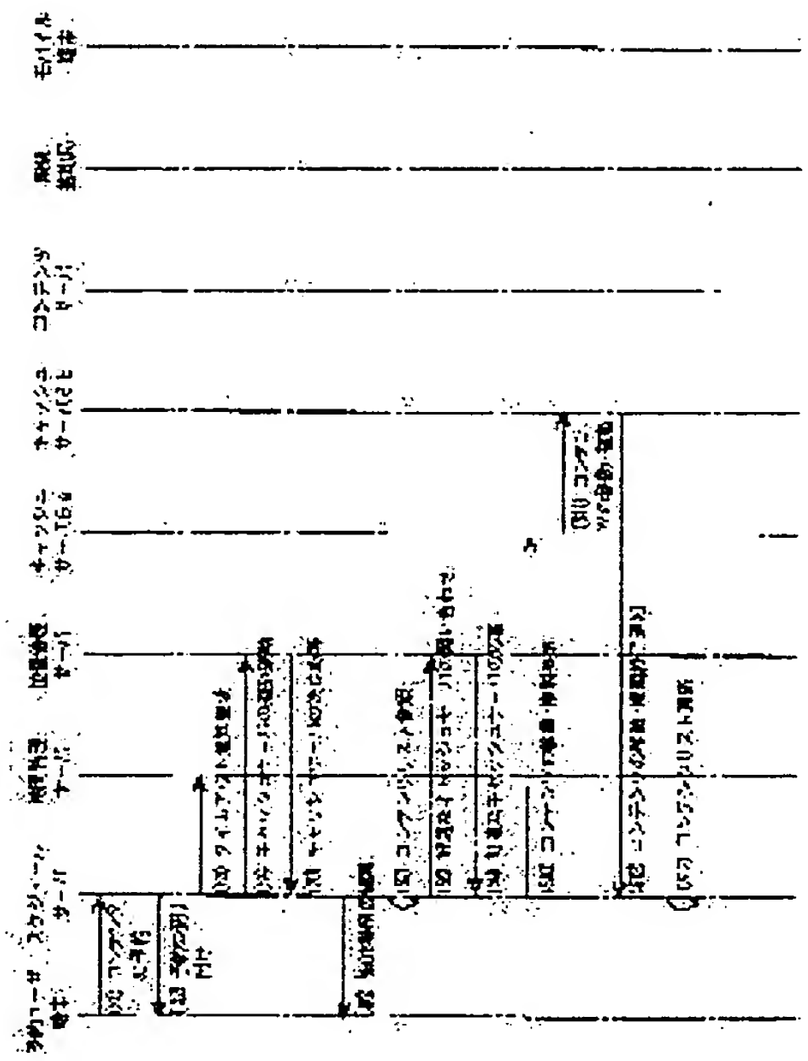
(54) CONTENTS-PROVIDING METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a contents-providing method, capable of providing contents desired by a user, with high quality at a place and time reserved by the user.
SOLUTION: This method includes a procedure, in which contests identification information and a screen for reservation where geographical and temporal conditions are reserved in distributing the contents, are displayed; a procedure in which a temporary storage means satisfying the reserved geographic condition is selected from among a plurality of temporarily storing means that are geographically and distributedly arranged; a procedure in which contents that corresponded to identification information inputted, using the reservation picture are acquired over a network and stored in the selected temporary storage means, and a procedure in which contents stored in the temporarily storing means are distributed to a mobile terminal with a timing which satisfies temporal conditions inputted using the screen for reservation.



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* NOTICES *

CLAIMS

[Claim(s)]
[Claim 1] The contents offer method which is characterized by providing the following and which distributes the contents by which acquisition reservation was carried out to a mobile terminal to predetermined timing Geographical and the procedure which displays the reservation screen where time conditions are reserved at the time of distributing the aforementioned contents to the identification information of contents, and a row The procedure which chooses a temporary storage means to satisfy the geographical conditions by which reservation was carried out [aforementioned] from two or more temporary storage meanses distributed geographically The procedure of memorizing the contents corresponding to the identification information inputted from the aforementioned reservation screen for the temporary storage means by which selection was acquired and carried out [aforementioned] on the network The procedure distributed to the aforementioned mobile terminal to the timing which satisfies the time conditions into which the contents memorized by the aforementioned temporary storage means were inputted from the aforementioned reservation screen
[Claim 2] The aforementioned reservation screen is the contents offer method according to claim 1 characterized by including either [at least] the contents reservation column which specifies the contents which wish to distribute, the reservation Japanese column which specifies the day wishing acquisition of the aforementioned contents or the reservation day-of-the-week column and the reservation time column which specifies the time wishing acquisition of the aforementioned contents.
[Claim 3] The aforementioned reservation screen is the contents offer method according to claim 1 characterized by reserving the position chosen on the aforementioned map screen as the aforementioned geographical conditions including the map screen which displays two or more positions which can distribute contents.
[Claim 4] the aforementioned reservation screen is characterized by to be carried out the acquisition reservation of the contents specified in the 2nd window of the above including the 1st window which indicates the field of contents by list, and the 2nd window which indicates the contents name belonging to the field chosen in the 1st window of the above by list -- the contents offer method according to claim 1
[Claim 5] two or more temporary storage meanses in case the aforementioned temporary storage means is chosen -- choosing -- the aforementioned contents -- every -- the contents offer method according to claim 1 characterized by distributing the contents which the storage means was alike at 1:00, respectively, memorized, and were memorized by one of temporary storage meanses to a mobile terminal
[Claim 6] two or more temporary storage meanses in case the aforementioned temporary storage means is chosen -- choosing -- the aforementioned contents -- every -- a 1:00 storage means -- dividing -- memorizing -- every -- the contents offer method according to claim 1 characterized by distributing each piece of contents divided into the storage means at 1:00 to a mobile terminal,

respectively
[Claim 7] The contents offer method according to claim 6 characterized by choosing the temporary storage means of the number according to the capacity of the aforementioned contents in case two or more aforementioned temporary storage meanses are chosen.
[Claim 8] The procedure which detects the position of the mobile terminal concerned before distributing the aforementioned contents to a mobile terminal, If the aforementioned mobile terminal has not arrived at the reservation position as the aforementioned geographical conditions The procedure which carries out the reselection of the temporary storage means corresponding to the position of the aforementioned mobile terminal, The contents stored temporarily for the temporary storage means chosen based on the geographical conditions by which the input was carried out [aforementioned] The contents offer method according to claim 1 characterized by distributing the contents memorized by the temporary storage means by which the reselection was carried out [aforementioned] to the temporary storage means by which the reselection was carried out based on the position of the aforementioned mobile terminal including the procedure made to move or reproduce to a mobile terminal.
[Claim 9] The contents offer method according to claim 1 characterized by providing the following The procedure which detects the current position and traverse speed of the aforementioned mobile terminal The procedure which predicts the attainment position of the aforementioned mobile terminal in the reservation time as the aforementioned time conditions based on the aforementioned detection result The procedure of judging whether the aforementioned mobile terminal being able to arrive at the reservation position as the aforementioned geographical conditions by the aforementioned reservation time based on the current position, the traverse speed, and the prediction attainment position of the aforementioned mobile terminal The procedure which will choose the temporary-storage means according to the prediction attainment position of the aforementioned mobile terminal if it judges that the aforementioned mobile terminal cannot arrive at a reservation position by reservation time, the procedure store the aforementioned contents temporarily to the temporary-storage means by which selection was carried out [aforementioned], and the procedure distribute the contents memorized by the aforementioned temporary-storage means to the timing of time conditions inputted from the aforementioned reservation screen to a mobile terminal
[Claim 10] The contents offer method according to claim 1 of carrying out containing the procedure whether it is memorized by 2nd temporary-storage means other than a temporary-storage means to by_which aforementioned selection of the contents by which acquisition reservation was carried out [aforementioned] was carried out, and judge, and the procedure will move or reproduce the contents concerned to the temporary-storage means by which selection was carried out [aforementioned] from the temporary-storage means of the above 2nd if the contents by which acquisition reservation was carried out [aforementioned] are memorized by the temporary-storage means of the above 2nd as the feature.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] this invention acquires the contents which had the acquisition demand from the user from the contents server on a network, stores them temporarily, predetermined temporary storage means, for example, cache server, and relates to the contents offer method distributed to a mobile terminal from the cache server concerned.
[0002]
[Description of the Prior Art] The contents which answered the demand of a user and came to hand from the contents server on a network as a method of distributing the contents which had the acquisition demand from the user to a mobile terminal are stored temporarily in advance to the cache server arranged from the mobile terminal in the near position, and the prior accumulation method distributed to a mobile terminal from a cache server to the timing of a request of these contents is discussed in JP,11-272711,A after that.
[0003]
[Problem(s) to be Solved by the Invention] Since the above-mentioned conventional technology was premised on a mobile terminal being a built-in end, it was inapplicable to the mobile network environment which a mobile terminal can move freely like ITS (Intelligent TransportSystem : intelligent transport system) to which research and development are advanced globally now.
[0004] That is, in the above-mentioned mobile network environment, since the places where a user receives the contents reserved as the place where a user sends the acquisition demand of contents as "reservation" differ, the distance of the cache server on a network and a mobile terminal may separate.
[0005] Furthermore, in a mobile network environment, since the radio section was included in part at least, when [of the communication section] distributing contents to a mobile terminal from a cache server, it was easy to produce degradation of communication quality, such as reduction in a band, and elevation of an error rate, and there was a problem that communication time also became long.
[0006] The purpose of this invention solves the technical problem of the above-mentioned conventional technology, and is to offer the contents offer method that the contents which a user wishes can be offered for high quality at the place and time which the user reserved.
[0007]
[Means for Solving the Problem] In the contents offer method which distributes the contents by which acquisition reservation of this invention was carried out in order to attain the above-mentioned purpose to a mobile terminal to predetermined timing Geographical and the procedure which displays the reservation screen where time conditions are reserved at the time of distributing the aforementioned contents to the identification information of contents, and a row, The procedure which chooses a temporary storage means to satisfy the geographical conditions by which reservation was carried out [aforementioned] from two or more temporary storage meanses

distributed geographically, The procedure of memorizing the contents corresponding to the identification information inputted from the aforementioned reservation screen for the temporary storage means by which selection was acquired and carried out [aforementioned] on the network, It is characterized by including the procedure distributed to the aforementioned mobile terminal to the timing which satisfies the time conditions into which the contents memorized by the aforementioned temporary storage means were inputted from the aforementioned reservation screen.

[0008] According to the above-mentioned feature, a cache is carried out beforehand in the temporary storage [a user expects the acquisition of a contents row] means position which was suitable in ** although [offering the contents reserved as registering time conditions as a reservation place and reservation time, respectively at reservation time in a reservation place] geographical. Therefore, a user can acquire desired contents even from a mobile terminal for high quality in a short time, without being restrained in time or a place.

[0009]

[Embodiments of the Invention] Hereafter, with reference to a drawing, this invention is explained in detail. Drawing 1 is drawing having shown the example of construction of the network which applied the contents offer method of this invention. In addition, the step number S1 given to each arrow and S2 grade correspond with the step number in drawing 20 -24 mentioned later.

[0010] The position management server 3, the time management server 4, and the schedule server 5 which are explained in full detail behind are connected to the Internet 1 through a router 2, and two or more cache servers 6a, 6b, and 6c distributed still more geographically are connected to it. Two or more base transceiver stations distributed geographically are connected to each cache servers 6a, 6b, and 6c, respectively.

[0011] The reservation user terminals 8 for a user reserving acquisition of contents are a personal computer and a telephone, and are connected to the Internet 1 through the switched network 7 and the router 9. Acquisition reservation of the contents by the user is possible also not only from the aforementioned reservation user terminal 8 but mounted terminal 8a, and mounted terminal 8a is connected with the aforementioned switched network 7 through the base transceiver station and the mobile communications network 11.

[0012] The contents in which the user did acquisition reservation are stored temporarily from the contents server (group) 12 at plurality or one of the cache servers 6 (6a, 6b, 6c), after that, are predetermined reservation timing and are offered through a base transceiver station to the offer place user terminal (it is hereafter expressed as a mobile terminal) 10.

[0013] when the reserved contents were already stored temporarily at one of the cache servers 6, after [moreover,] being transmitted to other cache servers from the direct or cache server concerned from the cache server concerned -- being concerned -- others -- it is provided from a cache server to the mobile terminal 10 In addition, this mobile terminal 10 may be the aforementioned reservation user terminal 8 or mounted terminal 8a, and combination.

[0014] Subsequently, the reservation method of the contents in this operation gestalt is explained along the screen displayed on the display of the reservation user terminal 8. In addition, the mutual relevance (transition state) of each screen to be explained from now on is as having been shown in drawing 17 .

[0015] Drawing 2 is drawing having shown an example of the "reservation distribution service" screen (menu screen) which is an initial screen. with this operation form The "contents reservation" button 201 for opening a "contents reservation" screen (drawing 3), The "contents reservation reference" button 202 for opening a "contents reservation reference" screen (drawing 11), The "contents reservation cancellation" "voice guidance" button 204 for a button 203 and setting up whether guidance with voice is performed for opening a "contents reservation cancellation" screen (drawing 13) is prepared.

[0016] Drawing 3 is drawing having shown an example of the aforementioned "contents reservation"

"contents reservation" screen. [which is displayed when a button 201 (drawing 2) is pushed]
[0017] In an item "reservation time", a user sets up the time which wishes acquisition of contents with a pro down menu. In an item "a reservation day of the week", a user sets up the day of the week which wishes acquisition of contents with a pro down menu. In addition, setup in an item "a reservation day of the week", such as "weekly Tuesday", "Friday from Monday", and "weekly Monday to Friday", is also possible. In an item "reservation time", a user sets up the time which wishes acquisition of contents with a pro down menu.
[0018] In an item "a reservation place", a user sets up the place which wishes acquisition of contents with a pro down menu. A setup of a reservation place is possible not only a pro down menu but by pushing the "map display" button 302, displaying a map screen, specifying a request place or inputting proper nouns, such as the address, a name of the station, and a spot name, on the map screen concerned, so that it may explain in full detail behind. Each aforementioned item is effective only when each radio button 301 is chosen.
[0019] In addition, with this operation gestalt, the radio button of "reservation time" and the radio button of a "reservation day of the week" cannot be chosen simultaneously.
[0020] In an item "contents", the contents of which a user expects acquisition are set up with a pro down menu. In addition, a hierarchical setup by carrying out the depression of the "field selection" button 303 is also possible so that it may explain in full detail behind with this operation form. In an item "a media type", a user sets up the perusal format of contents with a pull down menu. By the default, the type which was most excellent in the quality of a recycled article, for example is reserved.
[0021] In the example of drawing 3 , it means that distributing a movie "Titanic" by the format of MPEG 2 from 19:00 on July 18 in the Karuizawa service area (S. A) was reserved.
[0022] A push on the "all clearance" button 304 returns all the items displayed on the screen to an initial state. If the "reservation" button 305 is pushed, it is inspected whether the content of selection currently displayed on the screen is effective, and if effective, a contents reservation check screen (drawing 4) will be displayed. If not effective, another screen which notifies that will be displayed and a user will be asked for a check. If the button 306 "returning" is pushed, a "contents reservation" screen will be closed and it will return to the "reservation distribution service" screen of drawing 2 .
[0023] Drawing 4 is drawing having shown an example of the aforementioned "a contents reservation check" screen, and the time (reproduction time) which reproduction of the reserved contents takes, the time (distribution time) which distribution of the contents concerned takes, and the data size (contents size) of the contents concerned are acquired through a network, and it is displayed while the aforementioned content of reservation is displayed. Change of contents and a media type changes automatically the aforementioned reproduction time, distribution time, contents size, etc.
[0024] Here, if a user does the depression of the "reservation" button 401, the "contents reservation receptionist" screen of drawing 5 will be displayed, and a series of reservation procedures will be completed. "Reference ID" is displayed on a "contents reservation receptionist" screen as an identifier assigned to this content of reservation with this content of reservation.
[0025] Drawing 6 is drawing having shown an example of a "map display" "map display" screen in the "contents reservation" screen of aforementioned drawing 3 , and "address reference", "name-of-the-station reference", "zip code reference", and "spot name reference" are prepared with this operation gestalt as a classification of retrieval by keyword. [which is displayed when a button 302 is pushed] After choosing the radio button of a desired reference item, into a keyword input window, a user inputs a desired keyword and does the depression of the "reference" button 601. Thereby, the circumference map corresponding to the reference keyword is displayed.
[0026] in addition, the thing for which a circumference map is displayed also by specifying a position on a map besides the aforementioned retrieval by keyword with this operation gestalt -- possible --

"Hokkaido district -- two or more district buttons 602 called "the button and "Tohoku district" button" are prepared If the depression of one of the district buttons 602 is carried out, the map of the district concerned will be displayed.
[0027] Drawing 7 is drawing having shown an example of the map displayed when the "Kanto district" button 602 is pushed, and the name-of-a-prefecture button 701 and topographical map corresponding to each prefecture of the Kanto district are displayed. here -- for example, "Gumma Prefecture" -- "Numata" for the mark 801 showing the position (this operation gestalt Numata-shi and Shibukawa-shi) concerned which can offer contents in the prefecture being displayed, and specifying the position concerned as a "reservation place" further with the simple map of Gumma Prefecture, as shown in drawing 8 , if a button 701 is pushed -- a button 802, and "Shibukawa" -- a button 803 is displayed If a user does the depression of the "Numata" button 802, the acquisition place of contents, i.e., a "reservation place", will be reserved as Numata-shi.
[0028] "field selection" which drawing 9 is drawing of an item "contents" having shown an example of a "field selection" "field selection" screen in the "contents reservation" screen of aforementioned drawing 3 , and is the plurality corresponding to the field of contents -- a button 901 is displayed [which is displayed when a button 303 is pushed] In addition, "NEW displayed on the right of the "field selection" button 901! Offer of "is newly attained within one latest week, and it is shown that the contents which are not yet distributed to the user concerned are contained.
[0029] Here, for example, an "action and adventure" "contents selection" screen is displayed, and two or more buttons to which the contents name which belongs to the field concerned, and which can be offered was given are displayed. [which was shown in drawing 10 when the button was pushed] Here, if the depression of the "Titanic" button 1001 is carried out, "Titanic" will be reserved as contents and "Titanic" will be expressed as the "contents reservation" screen of aforementioned drawing 3 in the selection window of contents.
[0030] Drawing 11 is drawing having shown an example of a "contents reservation reference" "contents reservation reference" screen in the "reservation distribution service" screen of aforementioned drawing 2 , and the list of all contents of reservation is displayed with the reference ID. [which is displayed when a button 202 is pushed]
[0031] If a desired reservation list is chosen and the depression of the "detailed" button 1103 is further carried out by [a certain] being, being able to creep and highlighting that reservation list here when a user does the depression of each up-and-down arrow buttons 1101 and 1102, the "contents reservation reference (detailed)" screen shown in drawing 12 will be displayed. Moreover, the content of reservation is chosen and a "reservation cancellation" "contents reservation cancellation" screen is displayed. [which was shown in drawing 13 when the depression of the button 1104 was carried out]
[0032] Here, a user checks the content of a display and a "cancellation execution" "contents reservation cancellation check" screen is displayed. [which was shown in drawing 14 when the depression of the button 1301 was carried out] Here, the reservation concerned will be canceled if a user does the depression of the "cancellation execution" button 1401.
[0033] Drawing 20 -24 are the sequence diagram having shown the flow until a user reserves desired contents, the cache of the reserved contents is carried out from the contents server (group) 12 (drawing 1) to the predetermined cache server 6 and they are offered to further predetermined timing to a user. In addition, the case where a user reserves acquisition of contents from the reservation user terminal 8, and acquires these contents at the mobile terminal 10 is made into an example, and this operation gestalt explains.
[0034] In drawing 20 , if a user reserves desired contents on the aforementioned "contents reservation" screen (drawing 3) currently displayed on the display of the reservation user terminal 8 and does the depression of the "reservation" button 305, in Step 1, the content of reservation concerned will be registered through the Internet 1 to the schedule server 5 from the reservation user terminal 8.

[0035] Drawing 18 is drawing which expressed the content of the aforementioned schedule server 5 typically, and the identification information, the reservation time, the reservation day of the week, the reservation time, the reservation place, the media type, the reproduction time, distribution time, and contents size of contents are registered for every reference ID peculiar to each reservation.
[0036] At Step 2, the schedule server 5 checks the content of reservation, and returns the reservation user terminal 8 by using a check result as a "contents reservation check" screen (drawing 4). If a user checks the content of reservation on a screen and does the depression of the "reservation" button 401, formal registration of the content of reservation concerned will be carried out to the schedule server 5. The schedule server 5 assigns the reference ID peculiar to this content of reservation, and returns a "contents reservation receptionist" screen (drawing 5) to the reservation user terminal 8.
[0037] At Step 3, the schedule server 5 registers the purport which notifies a time-out to self at reservation time to the time management server 4. In addition, it is desirable to notify only the aforementioned distribution time in front rather than reservation time in consideration of the distribution time of the contents from the cache server 6 to the mobile terminal 10.
[0038] At Step 4, the selection request of the cache server which finally distributes contents to a user's mobile terminal 10 is sent out from the schedule server 5 to the position management server 3. At Step 5, the position management server 3 answers this selection request, compares a reservation place with the position of each cache server, and determines the cache server which distributes contents to the mobile terminal 10. This determination result is notified to the schedule server 5 from the position management server 3. This operation gestalt explains as that as which cache server 6b was chosen.
[0039] In addition, when there is no cache server which can distribute contents to the mobile terminal 10 of a reservation place, the alternative place in which that and offer are possible is proposed by the schedule server 5. The schedule server 5 proposes this proposal to the reservation user terminal 8 in Step 6, and stands by in preparation for the reservation demand for the second time from the reservation user terminal 8.
[0040] At Step 7, in order to aim at reuse of contents, it judges whether the contents by which the schedule server 5 was reserved with reference to own contents list 5a are already stored temporarily at one of cache servers. If the reserved contents are stored temporarily at neither of the cache servers, it progresses to Step 14 of drawing 21 mentioned later.
[0041] Drawing 19 is drawing which expressed an example of the aforementioned contents list 5a typically, and ID of the cache server where the contents concerned are stored temporarily is registered for every contents, respectively.
[0042] Moreover, if the reserved contents are stored temporarily at two or more cache servers, it will progress to Step 8 (drawing 20). At Step 8, the schedule server 5 is geographically the nearest to the position management server 3, or a suitable cache server, like the transit time of contents serves as the shortest is asked in advance, and in Step 9, an inquiry result (this operation form cache server 6a) is received, and it progresses to Step 10. In addition, with any one (book operation form, if the reserved contents are stored temporarily only at cache server 6a), they will progress to Step 10 immediately.
[0043] At Step 10, the schedule server 5 requires movement or the duplicate (it represents with movement hereafter) of contents from the aforementioned cache server 6a. At Step 11, cache server 6a answers the aforementioned move demand, and moves the contents stored temporarily at self to cache server 6b by which selection was carried out [aforementioned]. Moreover, at the time of a move end, the notice of an end is transmitted to the schedule server 5 from cache server 6b of a movement place in Step 12. At Step 13, the schedule server 5 answers the notice of an end, and updates own contents list 5a.
[0044] On the other hand, if the reserved contents are stored temporarily at neither of the cache servers as a result of referring to contents list 5a at Step 7 (drawing 20), as shown in drawing 21 ,

in Step 14, the schedule server 5 will access the contents server (group) 12 via the Internet 1 etc., and will perform the acquisition demand of contents. At Step 15, contents are stored temporarily from the contents server (group) 12 to cache server 6b. In Step 16, the schedule server 5 will add and update the contents and cache server 6b which were newly stored temporarily in Step 17 at contents list 5a (drawing 19), if the notice of a contents acquisition end is received from cache server 6b.

[0045] Then, in Step 18 of drawing 22 , if the notice of a time-out is received from the time management server 4, in Step 19, the schedule server 5 will ask the position management server 3 the current position of the mobile terminal 10, and will receive the current position of the mobile terminal 10 from the position management server 3 in Step 20. The schedule server 5 will direct distribution of contents to cache server 6b in Step 21, if the current position and the reservation position of the mobile terminal 10 are compared, both are approaching and it judges with distribution of the contents from cache server 6b to the mobile terminal 10 being possible as planned.

[0046] At Step 22, cache server 6b answers directions of the aforementioned distribution, and transmits the contents which carried out the cache beforehand to a base transceiver station. At Step 23, contents are distributed to the mobile terminal 10 from this base transceiver station. The mobile terminal 10 notifies that to the reservation user terminal 8 after the normal reception end of contents via base transceiver station (Step 25) and cache server 6b (Step 26), the schedule server 5 (Step 27), etc. (Step 28).

[0047] In the reservation user terminal 8, the "notice of contents distribution end" screen shown in drawing 15 appears on a display if needed, and the message of the purport which distribution of contents ended normally is displayed with Reference ID and the contents of reservation. If the "check" button 1501 is pushed on a this "notice of contents distribution end" screen, a series of processings will be completed.

[0048] In addition, according to the move state of degradation of channel quality, or the mobile terminal 10 etc., when contents are not able to be distributed normally, as shown in drawing 23 , the mobile terminal 10 requires resending of contents from the schedule server 5 in Step 24. The schedule server 5 which received the resending demand repeats the processing after the aforementioned step 19. If distribution is successful with this resending, the mobile terminal 10 will notify like the above the purport which contents offer ended to the mobile terminal 10 after the normal reception end of contents via base transceiver station/(Step 25) and cache server 6b (Step 26) and the schedule server 5 (Step 27) (Step 28). By the above, contents offer is ended normally.

[0049] Moreover, if the number of times of a resending demand of the aforementioned step 24 exceeds the predetermined number of times, the schedule server 5 will stop subsequent resendings and will notify the purport of contents offer failure to the reservation user terminal 8 in Step 29. In the reservation user terminal 8, the "contents distribution error" screen shown in drawing 16 appears on a display, and the message of a purport which failed in distribution of contents is displayed with Reference ID and the contents of reservation. In addition, if the "important point reservation" button 1601 is pushed in a "contents distribution error" screen, the contents reservation screen shown in aforementioned drawing 2 will be displayed, and re-reservation of contents will be attained.

[0050] In addition, if the current position of the mobile terminal 10 checked at the aforementioned steps 19 and 20 is greatly distant from the reservation position and cannot distribute contents to the mobile terminal 10 from cache server 6b, in Step 30 of drawing 24 , the schedule server 5 will emit the contents move demand to the cache server of the optimal position to cache server 6b. Cache server 6b transmits the contents by which the cache is carried out to self in Step 31 to the cache server (this operation form cache server 6a) of the optimal position.

[0051] Cache server 6a will notify a move end to the schedule server 5 in Step 32, if the cache of contents is completed. The schedule server 5 answers this notice of a move end, and updates own contents list 5a in Step 33.

[0052] In addition, according to the move situation of the mobile terminal 10 etc., if contents cannot be distributed to the mobile terminal 10 currently installed in the optimal position in present from cache server 6a, in Step 34, the current position of the mobile terminal 10 will be again asked to the position management server 3, and the current position of the mobile terminal 10 will be received from the position management server 3 in Step 35.
[0053] After this, when it cannot distribute even if it repeats processing of S35 from the aforementioned step 30 and repeats only the number of times of predetermined until distribution of contents is successful, in Step 36, the schedule server 5 notifies similarly that the purport of contents offer failure is the above to the reservation user terminal 8.
[0054] According to this operation gestalt, the cache of the contents reserved as reserving the time and place in the contents row of which a user expects acquisition is carried out beforehand to the cache server of a position suitable for offering this at reservation time in a reservation place. Therefore, a user can receive distribution in a short time for high quality, without restraining desired contents even from the mobile terminal 10 in time or a place.
[0055] Furthermore, according to this operation gestalt, if a user cannot reach to a reservation place by reservation time, the reselection of the cache server which can be distributed to the mobile terminal 10 of the current position will be carried out, and the re-cache of the reserved contents will be carried out to the cache server concerned. Therefore, distribution of contents is attained even when it cannot reach to a reservation place.
[0056] In addition, although the above-mentioned operation gestalt explained as what stores the reserved contents temporarily at one cache server, and is distributed to a user's mobile terminal only from the cache server concerned the influence of ****** or communication quality degradation -- the minimum -- suppressing -- high -- in order to perform reliable contents offer, the reserved contents are divided, it stores temporarily at two or more cache servers, and you may make it offer the divided contents from two or more cache servers to a mobile terminal
[0057] since what is necessary is according to such division distribution not to resend the whole contents anew but to resend only the piece of contents with a divided small capacity, even if it is the case where contents cannot be distributed normally -- shortening of offer time -- high -- reliable contents offer is attained
[0058] For example, when the base transceiver station group and the cache server (group) are arranged along with the highway, If contents are divided and stored temporarily not only at the cache server near the reservation place but at one or more cache servers of this side When it reaches to a reservation place, distribution can be made to complete, since distribution advances gradually in the distance in which it results to a reservation place even if the attainment time to a reservation place is overdue with traffic congestion. In addition, as for the number of the cache server which distributes the piece of contents, it is desirable to distribute many cache servers depending on the capacity of contents, so that the capacity of contents is large.
[0059] Furthermore, the following deformation is possible unless it deviates from the meaning and range in this invention.
[0060] (1) As compared with the traffic information which can receive the reservation time specified by the 1st modification user and a reservation place from the current position of a mobile terminal, or the Internet, you may demand change of the content of reservation from a user.
[0061] For example, considering the case where acquisition of movie" Titanic" is reserved by Karuizawa S.A. (service area) at 19:00 on July 18, the aforementioned schedule server 5 estimates the traverse speed V of the mobile terminal 10 (this operation gestalt 80 km/h) by asking the position management server 3 the position of the mobile terminal 10 two or more times. Moreover, the point to point distance X (this operation gestalt 40km) is estimated from the position of a position when the mobile terminal 10 asks the position management server 3 at the end, and Karuizawa S.A.
[0062] From the value of traverse speed V (=80 km/h) and Distance X (=40km), the time T (= 30

minutes) until it reaches Karuizawa S.A. is computed. And if the arrival prediction time to Karuizawa S.A. is a front [minutes / 18:30], the mobile terminal 10 will judge that it can arrive at a reservation place by reservation time, and will equip contents offer based on the original reservation with the schedule server 5. If arrival prediction time is back [minutes / 18:30], the schedule server 5 will judge that the mobile terminal 10 cannot arrive at a reservation place by reservation time, and will propose contents acquisition (distribution) in this side from Karuizawa S.A. to a user.
[0063] (2) Even if it was a front [time / 2nd modification reservation], when offer of contents is attained, notify that to a reservation user terminal or a mobile terminal, and urge early offer to it.
[0064] (3) Make the same contents store temporarily to a reservation place by the 3rd modification reservation time not only at the optimal cache server for a reservation place but at one or more cache servers of this side supposing the case where a mobile terminal cannot arrive. Thereby, even when a mobile terminal cannot arrive to a reservation place by reservation time, the reserved contents can be distributed to a user in this side.
[0065] (4) Make adjustable the temporary storage period of the contents in 4th modification each cache server according to the capacity of each cache server. For example, a maintenance period is made into 24 hours in the cache server whose capacity is 100 G bytes, and it may be 12 hours in the cache server whose capacity is 50 G bytes.
[0066] (5) Make a user specify only contents at the time of the 5th modification reservation, and don't make reservation time or a reservation place specify. The candidate of time and a place who can provide a user with the reserved contents is shown from a system, and a user is made to choose about reservation time or a reservation place.
[0067] (6) Width of face is given to the 6th modification reservation time, for example, if it is time, it will specify as a time zone. At this time, deletion of the contents within the aforementioned time zone is forbidden to a cache server. Moreover, distribution of contents is started with the directions from a mobile terminal.
[0068] (7) Specify a reservation place or not only reservation time but the own throughput and own processability ability of a mobile terminal at the time of the 7th modification reservation. In case the capacity of a mobile terminal distributes contents to a mobile terminal from a cache server a low case, the coding rate is made high, compressibility is raised, and the amount of information of distribution is reduced.
[0069] For example, the contents of an MPEG 2 coding method are changed into MPEG1 form with comparatively little amount of information. Or in I of an MPEG 2 coding method, P, and B frames, priority is given to I indispensable frames over decode, and it transmits to it.
[0070] In addition, a user does not specify the capacity of a mobile terminal at the time of reservation, but the cache server which distributes contents to a mobile terminal judges the capacity of a mobile terminal, and the capacity of a mobile terminal may make a coding rate high, may raise compressibility to a low case, and may reduce the amount of information of distribution.
[0071] At this time, the schedule server 5, each cache server, or some cache servers are provided with the media conversion program and frame filter from MPEG 2 to MPEG1, and are provided with contents according to the throughput and processability ability of a mobile terminal.
[0072]
[Effect of the Invention] According to this operation gestalt, the following effects are attained.
(1) The contents reserved as reserving the time and place in the contents row of which a user expects acquisition are beforehand stored temporarily to the cache server of a position suitable for offering this at reservation time in a reservation place. Therefore, a user can receive distribution in a short time for high quality, without restraining desired contents even from a mobile terminal in time or a place.
(2) If a user cannot reach to a reservation place by reservation time, the reselection of the cache server which can be distributed to the mobile terminal of the current position is carried out, and the reserved contents are again stored temporarily to the cache server concerned. Therefore,

distribution of contents is attained even when it cannot reach to a reservation place.

[Translation done.]

* NOTICES *

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing having shown the example of network construction which applied the contents offer method of this invention.
[Drawing 2] It is drawing having shown an example of a "reservation distribution service" screen.
[Drawing 3] It is drawing having shown an example of a "contents reservation" screen.
[Drawing 4] It is drawing having shown an example of a "contents reservation check" screen.
[Drawing 5] It is drawing having shown an example of a "contents reservation receptionist" screen.
[Drawing 6] It is drawing having shown an example of a "map display" screen.
[Drawing 7] It is drawing having shown an example of a "map display" screen.
[Drawing 8] It is drawing having shown an example of a "map display" screen.
[Drawing 9] It is drawing having shown an example of the "field selection" screen of contents.
[Drawing 10] It is drawing having shown an example of a "contents selection" screen.
[Drawing 11] It is drawing having shown an example of a "contents reservation reference" screen.
[Drawing 12] It is drawing having shown an example of a "contents reservation reference (detail)" screen.
[Drawing 13] It is drawing having shown an example of a "contents reservation cancellation" screen.

[Drawing 14] It is drawing having shown an example of a "contents reservation cancellation check" screen.
[Drawing 15] It is drawing having shown an example of a "notice of contents distribution end" screen.
[Drawing 16] It is drawing having shown an example of a "contents distribution error" screen.
[Drawing 17] It is the transition state view of each screen of drawing 2 to drawing 16 .
[Drawing 18] It is drawing which expressed the content of the schedule server 5 typically.
[Drawing 19] It is drawing which expressed an example of contents list 5a typically.
[Drawing 20] It is the sequence diagram (the 1) of 1 operation gestalt of this invention.
[Drawing 21] It is the sequence diagram (the 2) of 1 operation gestalt of this invention.
[Drawing 22] It is the sequence diagram (the 3) of 1 operation gestalt of this invention.
[Drawing 23] It is the sequence diagram (the 4) of 1 operation gestalt of this invention.
[Drawing 24] It is the sequence diagram (the 5) of 1 operation gestalt of this invention.
[Description of Notations]
1 [-- A position management server, 4 / -- A time management server, 5 / -- A schedule server, 5a / -- A contents list, 6 (6a, 6ba6c) / -- A cache server, 7 / -- A switched network, 8 / -- A reservation user terminal, 8a / -- A mounted terminal, 10 / -- A mobile terminal, 11 / -- A mobile communications network, 12 / -- Contents server (group)] -- 2 The Internet, 9 -- A router,

[Translation done.]